

U.S. Patent Application Serial No. 10/660,745
Amendment filed March 3, 2006
Reply to OA dated October 7, 2005

AMENDMENTS TO THE CLAIMS:

Please cancel claim 3 without prejudice or disclaimer, and amend claims 1, 4-9, 12 and 14-15, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A heat radiation shielding component dispersion used to produce heat radiation shielding products, which comprises:

fine particles of a hexaboride represented by XB_6 , wherein X is at least one selected from the group consisting of Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sr and Ca; and

a polymer type dispersant in which the fine hexaboride particles are dispersed; said hexaboride being a heat radiation shielding component, and said polymer type dispersant being mixed in the fine hexaboride particles in a proportion that the polymer type dispersant is from 0.3 part by weight or more to less than 50 parts by weight based on 1 part by weight of the fine hexaboride particles; and

does substantially not contain any organic solvent;

wherein said polymer dispersant has functional groups absorbed on the fine hexaboride particles to serve as anchors, as well as polymer backbone chains having an affinity for an organic solvent or thermoplastic resin, and is at least one selected from the group consisting of a polyacrylate dispersant, a polyurethane dispersant, a polyether dispersant, a polyester dispersant and a polyester-

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urethane dispersant.

Claim 2 (Original): The heat radiation shielding component dispersion according to claim 1, wherein said fine hexaboride particles are particles having an average particle diameter of 1,000 nm or less.

Claim 3 (Cancelled).

Claim 4 (Currently Amended): The heat radiation shielding component dispersion according to claim 1, wherein said fine hexaboride particles have been surface-treated by coating with at least one selected from the group consisting of a silane compound, a titanium compound and a zirconia compound.

Claim 5 (Currently Amended): A process for preparing a heat radiation shielding component dispersion, which comprises:

adding a polymer type dispersant to a dispersion in which fine particles of a hexaboride represented by XB_6 , wherein X is at least one selected from the group consisting of Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sr and Ca, have been dispersed in an organic solvent, in a mixing proportion that the polymer type dispersant is from 0.3 part by weight or more to less than 50 parts by weight based on 1 part by weight of the fine hexaboride particles, wherein said

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polymer dispersant has functional groups absorbed on the fine hexaboride particles to serve as anchors, as well as polymer backbone chains having an affinity for an organic solvent or thermoplastic resin, and is at least one selected from the group consisting of a polyacrylate dispersant, a polyurethane dispersant, a polyether dispersant, a polyester dispersant and a polyester-urethane dispersant; and thereafter

removing the organic solvent.

Claim 6 (Currently Amended): The process for preparing a heat radiation shielding component dispersion according to claim ~~1~~ 5, wherein said organic solvent is removed under reduced pressure at 100°C or less.

Claim 7 (Currently Amended): A heat radiation shielding component dispersion according to claim 1, 2, ~~3~~ or 4, having which has been prepared by a process which comprises adding a polymer type dispersant to a dispersion in which fine particles of a hexaboride represented by XB_6 , wherein X is at least one selected from the group consisting of Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Sr and Ca, have been dispersed in an organic solvent, in a mixing proportion that the polymer type dispersant is from 0.3 part by weight or more to less than 50 parts by weight based on 1 part by weight of the fine hexaboride particles, wherein said polymer dispersant has functional groups absorbed on the fine hexaboride particles to serve as anchors, as well as polymer backbone chains having an affinity for an organic solvent or thermoplastic resin, and is at least one selected

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from the group consisting of a polyacrylate dispersant, a polyurethane dispersant, a polyether dispersant, a polyester dispersant and a polyester-urethane dispersant; and thereafter removing the organic solvent.

Claim 8 (Currently Amended): A heat radiation shielding film forming coating liquid obtained by adding the heat radiation shielding component dispersion according to claim 1, 2, 3 or 4, to an organic solvent to dissolve ~~its heat radiation shielding component~~ the polymer dispersant, and adding a binder component.

Claim 9 (Currently Amended): A heat radiation shielding film forming coating liquid obtained by adding the heat radiation shielding component dispersion according to claim 7, to an organic solvent to dissolve ~~its heat radiation shielding component~~ the polymer dispersant, and adding a binder component.

Claim 10 (Original): A heat radiation shielding film obtained by coating a substrate with the heat radiation shielding film forming coating liquid according to claim 8.

Claim 11 (Original): A heat radiation shielding film obtained by coating a substrate with the heat radiation shielding film forming coating liquid according to claim 9.

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Claim 12 (Currently Amended): A heat radiation shielding resin form obtained by diluting and mixing the heat radiation shielding component dispersion according to claim 1, 2, 3 or 4, with a thermoplastic-resin form material, and forming the resulting mixture in a stated shape.

Claim 13 (Original): A heat radiation shielding resin form obtained by diluting and mixing the heat radiation shielding component dispersion according to claim 7, with a thermoplastic-resin form material, and forming the resulting mixture in a stated shape.

Claim 14 (Currently Amended): The heat radiation shielding resin form according to claim 12, wherein said thermoplastic-resin form material is at least one selected from the group consisting of a polycarbonate resin, a polyacrylate or -methacrylate resin, a saturated polyester resin, a cyclic olefin resin, a polyimide resin, a polyether-sulfone resin and a fluorine resin.

Claim 15 (Currently Amended): The heat radiation shielding resin form according to claim 13, wherein said thermoplastic-resin form material is at least one selected from the group consisting of a polycarbonate resin, a polyacrylate or -methacrylate resin, a saturated polyester resin, a cyclic olefin resin, a polyimide resin, a polyether-sulfone resin and a fluorine resin.